

# A SURVEY OF THE VERTEBRATE FAUNA OF A HEATHLAND AREA BETWEEN ROUND HILL AND THE GARDENS, NORTH-EAST TASMANIA

by

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## ABSTRACT

Eleven days, from 25 September to 6 October 1978 were spent in collecting and recording vertebrate animals and their ectoparasites in an area of coastal heathland in north-eastern Tasmania. Fifteen mammal species, 24 birds, 7 reptiles and 4 amphibians were found living in the heathland. An additional 24 bird species were found in the immediate vicinity. Fleas were collected from 124 mammals of 5 species.

## INTRODUCTION

The coastal heathland of north-eastern Tasmania has been considerably reduced in recent years (Kirkpatrick, 1977), much having gone under the plough and sown to improved pasture for sheep or cattle grazing. The remaining areas have been subjected to periodic burning but probably not more so than was the case prior to European settlement. Cattle grazing occurs on some heathland areas but in general the surviving heathland habitat is probably somewhat similar to that of pre-European settlement. Block clearing for the development of holiday homes and camping facilities continues to deplete vegetation on some coastal strips where the terrain is suitable.

Because of the continuing pressure on the remaining heathlands, it was considered desirable to undertake a limited collecting programme in this habitat and the Round Hill - Gardens area was selected. (Fig. 1). The objectives were to seek further knowledge of the status of animals in an area of typical north-east heathland and to strengthen the collections of zoological research material. Since this work was undertaken, the Tasmanian Department of Lands has declared all Crown Land from Binalong Bay northwards to Ansons Bay to be a State Reserve.

Eleven days, from 25 September to 6 October 1978 were spent in trapping small mammals and general collecting and observing, the work being carried out by the author and one volunteer assistant.

The sea birds offshore are discussed by Green (1979).

## HABITAT

Kirkpatrick (1977) in his study of heathland in Tasmania stated that "The heaths between Binalong Bay and the Gardens occur principally on Crown Land and partially on private land. However, much of the Crown Land has been occupied by shacks. The area consists of an extremely attractive mixture of turquoise seas, lichen-red granite tors, lagoons, heath and forest."

The heathland is confined to the coast and is broken up into isolated blocks by dry sclerophyll forest growing on ridges and small hills which have extended in places from the more elevated inland areas towards the coast. No agricultural development has taken place between Binalong Bay and the Gardens but the latter is the site of an old and well established pastoral property on which grazing has been carried out for many years.



Plate 1 Wet heathland west of Round Hill. The area is a natural basin into which water drains from the surrounding hills.



Plate 2 Dry heathland on elevated, well drained, sandy ridges near Big Lagoon. The specimens of *Antechinus minimus* and *Pseudomys novaehollandiae* were collected in this area.

TABLE 1 Vegetation from Big Lagoon — 4 October 1978

Tremandraceae	<i>Tetratheca pilosa</i>
Polygalaceae	<i>Comesperina volubile</i>
Rutaceae	<i>Correa reflexa</i>
Rhamnaceae	<i>Pomaderris pililera</i>
Leguminosae — Mimosoideae	<i>Acacia sophorae</i> <i>A. genistilolia</i> <i>A. botrycephala</i>
— Papilionateae	<i>Aotus ericoides</i> <i>Dillwynnia sericea</i> <i>D. glaberrima</i> <i>Gompholobium huegelii</i>
Haloragaceae	<i>Haloragis tetragyna</i>
Myrtaceae	<i>Calythrix tetragona</i> <i>Baeckea ramosissima</i> <i>Melaleuca gibbosa</i> <i>M. squarrosa</i> <i>Leptospermum scoparium</i> <i>Eucalyptus amygdalina</i>
Ficoideae	<i>Carpobrotus rossii</i>
Compositae	<i>Helichrysum scorpioides</i>
Stylidiaceae	<i>Stylidium graminifolium</i>
Campanulaceae	<i>Wahlenbergia</i> sp.
Epacridaceae	<i>Leucopogon ericoides</i> <i>Leucopogon collinus</i> <i>Epacris impressa</i> <i>E. lanuginosa</i> <i>Sprengelia incarnata</i> <i>Styphelia adscendens</i> <i>Monotoca elliptica</i>
Polygonaceae	<i>Muehlenbeckia adpressa</i>
Lauraceae	<i>Cassytha melantha</i>
Proteaceae	<i>Banksia marginata</i>
Thymeleaceae	<i>Pimelea glauca</i> <i>Pimelea linifolia</i>
Euphorbiaceae	<i>Amperea xiphioclada</i>
Casuarinaceae	<i>Casuarina monillera</i> <i>C. littoralis</i>
Monocotyledons	
Orchidaceae	<i>Glossodia major</i>
Cyperaceae	<i>Lepidosperma gladiatum</i> <i>L. laterale</i> <i>Lepidosperma concavum</i> <i>Scirpus nodosus</i>
Juncaceae	<i>Gymnoschoenus sphaerocephalus</i>
Restiaceae	<i>Restio complanatus</i> <i>Leptocarpus tenax</i> <i>Hypolaena lastigiata</i>
Iridaceae	<i>Patersonia fragilis</i>
Liliaceae — Xerotae	<i>Lomandra longilolia</i>
— Xanthorrhoeae	<i>Xanthorrhoea australis</i>
Gramineae	<i>Poa</i> sp. (tussocky)
Lichens	<i>Cladonia retipora</i>
Fern	<i>Pteridium esculentum</i> Bracken

(Table 1 contd.)

## Vegetation from Wet Heathland Habitat at Round Hill — 5 October 1978

Monocotyledons	
Cyperaceae	<i>Gymnoschoenus sphaerocephalus</i> <i>Lepidosperma</i> sp. <i>Lepidosperma tiliforme</i> <i>Baumea</i> sp. <i>Tetraria capillaris</i>
Restionaceae	<i>Leptocarpus tenax</i> <i>Leptocarpus brownii</i>
Liliaceae — Xerotae	<i>Lomandra longilolia</i>
Dicotyledons	
Dilleniaceae	<i>Hibbertia rilparia</i>
Leguminosae — Mimosoideae	<i>Acacia genistilolia</i>
— Papilionateae	<i>Sphaerolobium vimineum</i> <i>Pultenea subumbellata</i>
Myrtaceae	<i>Eucalyptus amygdalina</i> <i>E. ovata</i> <i>Leptospermum lanigerum</i> <i>Melaleuca gibbosa</i> <i>Melaleuca squarrosa</i>
Epacridaceae	<i>Sprengelia incarnata</i>
Lauraceae	<i>Cassytha pubescens</i>
Proteaceae	<i>Hakea nodosa</i> <i>H. teretifolia</i>
Casuarinaceae	<i>Casuarina paludosa</i>
Ferns	<i>Gleichenia dicarpa</i> <i>Lindsaya linearis</i>
Selaginellaceae	<i>Selaginella uliginosa</i>



Males	Number in Sample	Range
Weight	8	28-36
Total Length	8	175-198
Tail	8	73-90

  

Females	Number in Sample	Range
Weight	10	20.5-29
Total Length	10	170-197
Tail	10	70-80

TABLE 2 Weights (gm) and measurements (mm) of *Sminthopsis leucopsis*

Males	Number in Sample	Range	Mean $\pm$ Standard Error	Standard Deviation
Weight	59	64-180	124.3 $\pm$ 2.7	20.6
Total Length	59	230-305	275.3 $\pm$ 3.3	25.3
Tail	59	90-127	114.7 $\pm$ 1.0	7.5

  

Females	Number in Sample	Range	Mean $\pm$ Standard Error	Standard Deviation
Weight	62	61-138	97.9 $\pm$ 1.8	14.1
Total Length	62	238-297	268 $\pm$ 1.7	13.3
Tail	62	96-127	112.9 $\pm$ 0.9	6.9

TABLE 3 Weights (gm) and measurements (mm) of *Rattus lutreolus*

Males	Number in Sample	Range
Weight	12	15-21.5
Total Length	11	150-185
Tail	11	73-88

  

Females	Number in Sample	Range
Weight	5	12-18
Total Length	5	143-167
Tail	5	66-84

TABLE 4 Weights (gm) and measurements (mm) of *Mus musculus*

Trapping was undertaken in heathland ranging from low-lying waterlogged areas (Plate 1) to well-drained sandy ridges and stabilised coastal sand dunes. (Plate 2). Random botanical sampling was undertaken in both wet and dry environment (Fig. 1) and species collected for identification are listed in Table 1.

The wet area sampled lies west of Round Hill and is a drainage basin punctuated with spurs of higher ground which support stunted *Eucalyptus* spp. regrowth. It is subjected to sudden rises in water level when rain falls and water runs from the surrounding hills. At such times up to 20 cm of water may flood the lowest parts of the basin and as there is no outlet except by seepage through the sandy soil to the coast, drainage is relatively slow. The section where small mammal trapping was undertaken had not been burnt for some years, the vegetation in places being up to 2 m high and sufficiently dense for the formation of burrow-like runways beneath the foliage. Subsurface burrows were not formed in this habitat, probably because of repeated flooding.

The dry areas supported a more diverse vegetation with cover ranging from 30 cm to 3 m in height depending primarily upon the time lapse between burns. Runways were prevalent where vegetation was low and dense and in the dry sandy soil extensive burrow systems were formed by Swamp-rats *Rattus lutreolus*. The Cutting Rush *Lomandra longifolia* was a common element of the vegetation in frequently burned areas and its rapid regrowth provides small mammal cover at an early stage. Clumps of this plant were usually found to support the runways of Swamp-rats and subsurface burrows were often formed about the root systems.

#### METHODS AND SOURCES OF DATA

Mammal collecting was undertaken by sample trapping in a number of sites. Standard commercial rat traps were set on about 1800 trap nights, Sherman tin traps (23 x 9 x 8 cm) on 350 trap nights and wire cage traps (45 x 20 x 20 cm) on 50 trap nights. Traps were placed at 10-20 m intervals and mostly left set for two nights at each site, baited with brown bread spread with peanut butter. Bait was changed each time traps were moved or reset.

When mammals were removed from traps, they were immediately placed in individual plastic bags and chloroform administered to kill ectoparasites and prevent cross infestation. When mammals were processed, the ectoparasites were collected by brushing and shaking them from the pelage onto a sheet of white paper and then preserved in 70% alcohol. Standard measurements were made, the abdominal cavity of each mammal and reptile opened and breeding condition recorded. One kidney was removed from each mammal and preserved in formal saline for later examination for *Kolossella* spp., six livers were removed to examine for liver fluke *Fasciola hepatica* and blood samples were taken from four mammals for *Leptospirosis* testing. Vertebrate animals were preserved in 4% formalin. About 50 km of road patrol spotlighting was carried out over three evenings and a watch for bats flying at dusk was undertaken on five evenings. Nomenclature for mammals follows Ride (1970).

Birds were observed and recorded at every opportunity but, except for three Scrub-wrens *Sericornis frontalis* accidentally caught in snap traps, none were collected. Nomenclature follows Schodde et al. (1978).

Reptiles were caught by hand whenever possible but the cool and overcast conditions which prevailed for much of the time resulted in little reptilian activity. Nomenclature follows Rowlinson (1974).

Frogs were recorded by their calling and by the collection of occasional individuals but very little time was devoted to searching for them. Nomenclature follows Littlejohn & Martin (1974).

Because of the relatively short time spent in the area, no attempt was made to assess the degree of species abundance beyond a use of the broad terms uncommon or common. Only those species collected and/or observed are listed and remarks are confined to activity in heathland.

#### FAUNA LIST

##### Mammals

Brush Wallaby *Macropus rufogriseus*

Common, visiting the more recently burnt, exposed areas to feed at night. Some hide by day in tall heath and scrub on the dry banks.

Pademelon *Thylogale billardieri*

Common in the tall, dense areas wherever growth is sufficiently advanced to provide cover. In such areas it has formed runways beneath the vegetation from which it ventures at night to feed in adjacent clearings.

Brush-tailed Possum *Trichosurus vulpecula*

Uncommon, probably because of a lack of trees with cavities suitable for diurnal hides in the heathland. Some individuals visit the recently burnt or open areas where grazing is available. Both the black and grey phases are present. It is probably more prevalent in the nearby sclerophyll forest.

Common Wombat *Vombatus ursinus*

Uncommon but generally distributed, hiding by day in the taller dense vegetation and in burrows on the dry sandy banks. It ventures onto the most recently burnt and exposed areas to graze at night.

Tiger Cat *Dasyurus maculatus*

Uncommon, an adult female (weight 2 kg) caught in a cage trap set in dry heathland was found to be heavily lactating with four nipples greatly enlarged and was released after examination.

Quoll *Dasyurus viverrinus*

Uncommon; an adult (black phase) was seen on the roadside when spotlighting near Big Lagoon.

Swamp Antechinus *Antechinus minimus*

Uncommon; one adult female (weight 55 g) was trapped in dry heathland near Big Lagoon. Six of the eight nipples were considerably enlarged and lactating had only recently ceased. The pouch opening was 30 x 30 mm. This represents an extension of the distributional range given by Green (1972) and is the first occasion that the species has been found living in dry heathland. It has also recently been recorded by Green (1979) from rainforest in north-western Tasmania but its preferred habitat appears to be wet sedgeland (Green, 1972). Small, apparently relict areas of sedge (Buttongrass *Gymnoschoenus sphaerocephalus*) persist in the general area but are largely kept burning to a stage where they are unacceptable to *A. minimus*. It appears most likely that this animal represents another instance of a relict population surviving from an earlier, wider distribution which has been reduced progressively by gradually changing climatic and environmental conditions as previously suggested by Green (1972).

Its post breeding condition suggests that the population in this warm, coastal climate breeds very much earlier than populations in the colder highlands where young in the pouch have been recorded as late as December (Green 1972, pl. 22).

White-footed Dunnart *Sminthopsis leucopus*

Common, eighteen were trapped in both wet and dry habitats. It also occurs in dry sclerophyll forest on the surrounding hills as found on a collecting trip in June 1976 when twelve were collected over a range of habitats (unpublished data). The largest male (Table 2) greatly exceeds that given by Green (1973) and males considerably exceed females in both weight and size. This is consistent with sexual differences of weights and body proportions of other dasyurid marsupials (Quoll *Dasyurus viverrinus* and Tasmanian Devil *Sarcophalus harrisii*) from north-eastern Tasmania (Green 1967a). All pouches were undeveloped and by dissections and superficial examination, no animals were found to be pregnant. A female collected at Round Hill on 11 October 1976 had eight pouch young each with a crown-rump length of 8 mm (Green, 1972, 34).

Eastern Swamp-rat *Rattus lutreolus*

Common in both wet and dry heathland and around the edges of swamps and lagoons wherever the vegetation is sufficiently dense to provide shelter. There it forms extensive runways and it burrows freely in the dry sandy soil.

One hundred and twenty-one animals, all fully adult, were trapped. Some measurements are given in Table 3 which shows males significantly exceed females in weight and size. Only one was found to be pregnant, with three embryonic sacs having developed to 6 mm in diameter, one in the left and two in the right uterine horns. This closely fits the date for onset of breeding recorded by Green (1967b). Teste development appeared to be at a peak with scrota greatly enlarged and measuring up to 35 x 25 mm in many rats. Most animals appeared to be healthy, vigorous young rats less than one year old but some of both sexes were obviously aged survivors of the previous generation, living to a second breeding season and in such a state of decline that it would be unlikely they could survive territorial competition from the new generation.

One female was found to be distinctly 'rumpy' with the tips of the fur and guard hairs on the back just above the tail, broken to expose the underfur. This is a common occurrence in the Brush-tailed Possum *Trichosurus vulpecula* (Munday, 1966) but has not previously been recorded in the Eastern Swamp-rat. Skin scrapings for mites and cultures for ringworm fungi both proved negative (B. L. Munday pers. comm.). One female had a white patch about 20 x 30 mm in extent on the right flank.



**New-holland Mouse *Pseudomys novaehollandiae***

Uncommon in the heathland but probably more numerous in the adjacent areas and beneath the stunted *Eucalyptus* spp. regeneration which is believed to be its favoured habitat. Four adult males were trapped within a few hundred metres of each other on the same night in dry heathland north of Big Lagoon where a few regenerating eucalypts had grown to about 5 m in height. The animals were taken on the second night of the set, the first night's catch being only of Swamp-rats.

Another male, collected on 3 June 1976, was trapped on dry leaf litter in an open area beneath scrubby regenerating *Eucalyptus* spp. about 1 km south of the present site. (Unpub. data).

**Water Rat *Hydromys chrysogaster***

Uncommon in heathland but more numerous around the swamps, lagoons, drainage systems and coastline. An adult male (weight 594 g, head and body length 543 mm, tail 245 mm) was caught in a cage trap baited with raw fish and set over water in a drainage section of wet heathland.

**House Mouse *Mus musculus***

Common in dry heathland; eight females and ten males, all adult, were trapped. None were pregnant or lactating. In most instances testes were undeveloped and inguinal. Two had testes enlarged, their scrota being 10 x 8 mm. Measurements are given in Table 4.

**Rabbit *Oryctolagus cuniculus***

Uncommon; favouring the dry sandy ridges and coastal dunes where faeces and diggings were occasionally found.

**Little Bat *Eptesicus pumilus***

Uncommon; individuals were seen flying at dusk on several evenings. One bat was shot and found to be an adult male of this species.

**Echidna *Tachyglossus aculeatus***

Uncommon; only one adult female (weight 1.6 kg), lacking any sign of recent lactation, was collected in dry heathland.

**Birds found living in the heathland**

**Swamp Quail *Coturnix ypsilophora***

Uncommon; in dry heathland where the vegetation was relatively low and semi-open. Only pairs or individuals were seen.

**Masked Lapwing *Vanellus miles***

Uncommon; a party of six found resting on the gravel road through recently burnt heathland south of Big Lagoon were the only birds present.

**Green Rosella *Platycercus caledonicus***

Uncommon; up to three occasionally seen in stunted eucalypts growing in dry heathland. Though such habitat is suitable for shelter and feeding, the absence of trees with nesting hollows would force this bird to return to the sclerophyll forest for breeding.

**Pallid Cuckoo *Cuculus pallidus***

Uncommon; one found calling from stunted eucalypts in dry heathland and others occasionally from eucalypts bordering the heathland.

**Fan-tail Cuckoo *Cuculus pyrrhophanus***

Uncommon; occasionally seen and heard calling from the dry heathland.

**Richards Pipit *Anthus novaeseelandiae***

Uncommon; occasional pairs were found in the most recently burnt areas south of Big Lagoon and behind Swimcart Beach. Behavioral activity suggested these birds were nesting.

**Black-faced Cuckoo-shrike *Coracina novaehollandiae***

Uncommon; a few sightings of individual birds resting in the stunted eucalypts. All appeared to be recently arrived transitory migrants.

**Blackbird *Turdus merula***

Uncommon; only one heard singing from the vicinity of the heathland — dry sclerophyll forest ecotone.

**Flame Robin *Petroica phoenicea***

Uncommon at the time of the survey. Several were seen about the dry heathland at Round Hill on 30 September, apparently recently arrived transitory migrants.

**Golden Whistler *Pachycephala pectoralis***

Uncommon; an adult female was seen in tall heath and stunted eucalypts near Round Hill on several occasions.



Grey Shrike-thrush *Colluricincla harmonica*

Uncommon; individuals were occasionally seen in stunted eucalypts in dry heathland.

Grey Fantail *Rhipidura fuliginosa*

Uncommon; individuals were occasionally seen feeding above the taller vegetation, mostly about the stunted eucalypts.

Superb Fairy Wren *Malurus cyaneus*

Uncommon; only infrequent pairs were found in the more densely vegetated areas of both wet and dry heathland.

Calamanthus *Sericornis fuliginosus*

Uncommon; individuals were occasionally seen and heard calling in both the wet and dry heathland.

Brown Thornbill *Acanthiza pusilla*

Common throughout the area and often observed searching amongst the foliage of heath.

Yellow Wattlebird *Anthochaera paradoxa*

Uncommon; occasional birds were seen and heard about the taller eucalypts growing on the edge of dry heathland at Round Hill.

Crescent Honeyeater *Phylidonyris pyrrhoptera*

Common throughout the area and regularly heard calling.

New Holland Honeyeater *Phylidonyris novaehollandiae*

Common throughout the area in pairs and small parties.

Tawny-crowned Honeyeater *Phylidonyris melanops*

Common, especially so in the dry heathland and associated clump of stunted eucalypts. Most birds appeared to be breeding and one nest with two eggs hatching was found in short heath behind Swimcart Beach on 5 October.

Eastern Spinebill *Acanthorhynchus tenuirostris*

Uncommon; seen or heard calling occasionally in the vicinity of Round Hill.

Silvereye *Zosterops lateralis*

Common in small parties which appeared to be of nomads or transitory migrants passing through the area.

Beautiful Firetail *Emblema bella*

Common; pairs and individuals were found in the taller heath and stunted eucalypts.

Grey Butcherbird *Cracticus torquatus*

Uncommon in the heathland but common in the adjacent dry sclerophyll forest from which it makes sorties into the heathland to hunt its prey.

Forest Raven *Corvus tasmanicus*

Uncommon in the heath; a pair, apparently nesting in nearby dry sclerophyll forest, occasionally visited the short coastal heath behind Swimcart Beach in search of food.

**Birds seen near the heathland**

Great Cormorant *Phalacrocorax carbo*

Occasionally seen about the lagoons.

Little Pied Cormorant *Phalacrocorax melanoleucos*

Occasionally seen about the lagoons.

White-faced Heron *Ardea novaehollandiae*

One observed at Big Lagoon.

White-bellied Sea-eagle *Haliaeetus leucogaster*

One seen near Sloop Rock.

Marsh Harrier *Circus aeruginosus*

One observed near Sloop Rock.

Brown Falcon *Falco berigora*

One observed near Big Lagoon.

Pied Oystercatcher *Haematopus longirostris*

Occasionally seen near Big Lagoon.

Hooded Plover *Charadrius rubicollis*

A pair observed on the beach near Big Lagoon.

Silver Gull *Larus novaehollandiae*

A few observed about the beaches and lagoons.

**Pacific Gull *Larus pacificus***

A few seen about the beaches and at Big Lagoon.

**Crested Tern *Sterna bergii***

A few seen flying over Big Lagoon.

**Yellow-tailed Black Cockatoo *Calyptorhynchus lunereus***

Four flying south over the heathland at Round Hill on 26 September and one flying north over the same area on 5 October.

**Swift Parrot *Lathamus discolor***

Six flying north at Round Hill at 0730 hours on 3 October.

**Blue-winged Parrot *Neophema chrysostoma***

One flying south, high and fast, at 0700 hours on 2 October.

**Kookaburra *Dacelo novaeguineae***

Often heard calling in the sclerophyll forest.

**Welcome Swallow *Hirundo neoxena***

A few resident pairs around the houses. Several small parties, migrating southwards, flying high and fast at 0900 hours on 26 September.

**Tree Martin *Cecropis nigricans***

A few migrating southwards in company with Dusky Woodswallows on 28 September.

**White-fronted Chat *Ephthianura albitrons***

Several seen around the shore of Big Lagoon.

**Striated Pardalote *Pardalotus striatus***

Often heard calling in the dry sclerophyll forest.

**European Goldfinch *Carduelis carduelis***

One flying northwards high above Swimcart Beach on 1 October.

**European Greenfinch *Carduelis chloris***

One seen flying over the coastal sand dunes at Big Lagoon.

**Common Starling *Sturnus vulgaris***

Parties of up to 30 were seen flying southwards along the coast in the evenings. Similar such parties were flying northwards along the same route in the mornings.

**Dusky Woodswallow *Artamus cyanopterus***

Migrating parties of up to 20 were seen flying high in a southward direction on four days, between 26 September and 1 October.

**Grey Currawong *Strepera versicolor***

One seen flying over heathland near Round Hill.

**Reptiles****Dragon Lizard *Amphibolurus diemensis***

Often seen in the dry heathland. Three males of from 40-57 mm head and body length had teste development of from 5 x 3 to 7 x 4 mm.

**Tussock Skink *Leiopisma entrecasteauxii***

One female collected in dry heathland at the edge of dry sclerophyll forest, 56 mm head and body length, had 5 ovum developed to 4 mm.

**Metallic Skink *Leiopisma metallica***

Two males collected in dry heathland, 40 x 62 mm head and body length, had testes developed to 2 x 1 mm and 5 x 1 mm respectively.

**Three-lined Skink *Leiopisma trilineata***

One sub-adult, 32 mm head and body length, was collected from dry heathland on the edge of dry sclerophyll near Round Hill.

**Whites Skink *Egernia whitii***

Often seen in the dry heathland where it forms burrows in the loose soil. One female, collected in dry heathland, 166 mm head and body length, had 9 ovum developed to 1 mm.

**Copperhead Snake *Austrelaps suberbus***

A sub-adult female, 426 mm head and body length, was caught in open dry heathland at 0800 hours on an overcast, cool, windy morning.

**White-lipped Snake *Drysdalia coronoides***

An adult female, 339 mm head and body length, had six ovum developed to 15 x 10 mm.

## Amphibians

### Brown Tree-Frog *Litoria ewingi*

A few were heard calling from the wet heathland at night.

### Banjo Marsh-frog *Limnodynastes dumerili*

A few were heard calling during the day from small pools in wet heathland near Round Hill.

### Yellow-vented Froglet *Crinia signilera*

Many were heard calling at night from drainage areas in the wet heathland near Round Hill.

### Tasmanian Froglet *Crinia tasmaniensis*

Many were heard calling at night from drainage areas in the wet heathland near Round Hill.

## Sundry Invertebrates

### Fleas

A total of 570 fleas were collected from 124 hosts. These have been deposited with Professor Robert Traub, University of Maryland, U.S.A. for taxonomic research.

### Helminthes

From *Rattus lutreolus* 29 September and 5 October, *S. l. Hymenolepsis* spp. mesentary larval spiruroid.

From *Malurus cyaneus* 1 October, *Diplotriana? tridens*.

From *Sminthopsis leucopus* 29 September, *Tetrabothriostrongylus? mackerrasae*, "*Strongyloides*" sp., amitostomated Trematoda.

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